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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

CRAIG, DWIN M

ART UNIT	PAPER NUMBER
2123	

DATE MAILED: 12/02/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/469,277	<b>Applicant(s)</b> DAKE ET AL
	<b>Examiner</b> Dwin M Craig	<b>Art Unit</b> 2123

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

1)  Responsive to communication(s) filed on 23 October 2002 .

2a)  This action is **FINAL**.                    2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## **Disposition of Claims**

4)  Claim(s) 1-21 and 28-32 is/are pending in the application.  
4a) Of the above claim(s) 22-27 is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) 1-21 and 28-32 is/are rejected.

7)  Claim(s) \_\_\_\_\_ is/are objected to.

8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## **Application Papers**

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)  The proposed drawing correction filed on 24 October 2002 is: a)  approved b)  disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)  The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

13)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)  All b)  Some \* c)  None of:

1.  Certified copies of the priority documents have been received.
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

14)  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a)  The translation of the foreign language provisional application has been received.

15)  Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)      4)  Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)      5)  Notice of Informal Patent Application (PTO-152)  
3)  Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.      6)  Other: \_\_\_\_\_

## DETAILED ACTION

1. Claims 1-21 and 28-32 have been presented for reconsideration in light of Applicant's amended based on applicant's amended specification. Claims 1-21 have been reconsidered and rejected, Claims 22-27 have been excluded from consideration as per Applicant's request, Applicant's new Claims, 28-32 have been rejected.

### Title

2. The applicant's new title, "USING SOFTWARE OBJECTS TO COMMUNICATE WITH HARDWARE DEVICES" is accepted as a suitably descriptive title for applicant's invention and the examiner drops the earlier objection to said title.

### Response to Arguments

3. Applicants arguments filed 24 October 2002 have been fully considered. Examiners response is as follows:

Regarding applicants submission of amended drawings: The amended drawings filed on October 24<sup>th</sup> have been reviewed by the examiner, figures 5 and 12 are approved by the examiner.

Regarding applicants response to rejection of Claims Over the Savitsky or Savitsky and Brumley: Applicants have argued that the examiner's reference to prior art *Savitsky* does not disclose "*defining a plurality of hardware devices as a plurality of objects*" as stated in applicant's first independent claim and further argues that "*Savitsky relates to software objects*

*describing services for one of the plurality of remote machines*". Examiner asserts that the *Savitsky* reference does disclose defining a plurality of hardware devices as a plurality of objects, a *Software object* is the same as *an object*, a *remote machine* in the context of the *Savitsky* reference is a **hardware device**, examiner asserts that in Col. 3 Lines 60 to 67 the *Savitsky* reference discloses in greater detail, [A "component" is a software object that represents the services and state of some remote machine. A component may have sub-components, e.g. a copier may have a sorter and a feeder attached to it. A "device" is a computer system peripheral that enables the computer system in which the remote service application is running to communicate with one or more remote machines.] and further in Col. 4 Lines 1-4 *Savitsky* discloses, [A "device driver" is a software object that provides as interface by which the remote service application communicates with a device.] to summarize, the *Savitsky* reference discloses defining a plurality of hardware devices, *remote fax machines computer system peripheral, sub-components...sorter, feeder*, represented as a plurality of objects, *A "component" is a software object that represents the services and state of the remote machine...A "device driver" is a software object.*

With regards to Claim 2 applicant has further argued that the examiner's reference to prior art *Savitsky* does not disclose "*assigning a plurality of properties to the plurality of hardware devices*" nor "*assigning a plurality of methods to the plurality of hardware devices*". Examiner asserts that the *Savitsky* reference does disclose "*assigning a plurality of properties to the plurality of hardware devices*" and "*assigning a plurality of methods to the plurality of hardware devices*". As disclosed in the *Savitzky* reference in Col. 1 Lines 26 to 35, As is understood to one skilled in the art, an "object" is an abstraction of a real world entity, *here is*

*the plurality of hardware devices*, and is implemented, i.e. when the class is designed it assigns the following to the real world entity, in the applicants case a *plurality of hardware*, as a combination of a data structure (whose fields are called "attributes" or "data members"), here is *the plurality of properties*, and a set of operations ("methods" or "member functions"), here is *the plurality of methods*, that can be performed on it. A class" is a data type for a set of objects that each have the same data structure and the same operations. An instance, *in this case the assignment*, " of a class is an object, the data type of which is the class as actually embodied in the memory of a running application program. The Examiner has determined that the Applicant's arguments are not persuasive and upholds that the *Savitzky* reference as a prior art teaching of the Applicants claimed invention.

Regarding applicants response to rejection of Claim 6 Under Brumley or Brumley and Morris :

Applicants have argued that the examiner's reference to prior art *Brumley* reference does not disclose "*a medium storing instructions to manipulate a redundant array of independent disks modeled by the plurality of objects as recited in claim 6*" The Examiner drops his 35 U.S.C. 102(e) rejection against Claim 6 based on the applicants amended Claim 6.

Regarding applicants response to rejection of Claims Under Brumley or Brumley and Morris

with respect to Claim 11: Applicants have argued that the examiner's reference to prior art

*Brumley* reference does not disclose, "*a software program which models the plurality of hardware devices as a plurality of objects wherein the plurality of objects comprise a plurality of methods and a plurality of properties.*" Examiner asserts that the *Brumley* reference does

disclose a “*Software program that models the plurality of hardware devices as a plurality of objects*”. The *Brumley* reference does disclose a *software program* **Figure 2 (of the Brumley reference)** in the block labeled “**DAQ APPLICATION**” is a software program, in **Col. 5 Lines 30-50** disclose software programs. *A Software Program that models a plurality of hardware devices as a plurality of objects* is disclosed in **Figures 7, 8 and 11** discloses multiple hardware devices being modeled by multiple objects, see *Brumley Figure 11* entitled “**MINI\_DRIVER CLASS MODEL**” Examiner directs Applicant’s attention to the boxes in **Figure 11** of the *Brumley* reference which are labeled **MINIDRIVER PRIMITIVE, MINI DRIVER, BUS OBJECT, MINI-DRIVER, 8255 DRIVER, STC DRIVER**, please note that this figure reveals, “*models the plurality of hardware devices ( STC DRIVER and 8255 DRIVER blocks, as illustrated in the figure, are hardware devices being modeled as an objects) as a plurality of objects wherein the plurality of objects comprise a plurality of methods and a plurality of properties (Note the MINI DRIVER PRIMITIVE OBJECT, there is a list of methods and properties, SET (ATTR IO, ATTR VAL), GET (ATTR IO, ATTR VAL) SET and GET are methods, ATTR IO and ATTR VAL are properties)*”. The Examiner also wishes to call to Applicant’s attention **Col. 4 Line 64** which states, *FIG. 11 illustrates the mini-driver class model*. Examiner asserts that **Figure 11** in the *Brumley* reference is a good example of Unified Modeling Language, (UML) diagrams. The Examiner has determined that the Applicant’s arguments are not persuasive and upholds that the *Brumley* reference as a prior art teaching of the Applicants claimed invention.

Art Unit: 2123

Regarding applicants response to Examiner's 35 U.S.C. 103 rejection of Claims 16-21 under Brumley or Brumley and Morris; The Applicant states that the rejection is improper due to a lack of motivation to combine the *Brumley* and *Morris* reference in Examiner's 35 U.S.C. 103 rejection of Claims 16-21. The Examiner asserts that the 35 U.S.C. 103 rejection did contain a motivation to combine stated as follows; (*from the Examiner's original Office Action*, **At the time of the invention it would have been obvious to one of ordinary skill in the art to modify *Brumley* with *Morris* in order to represent disk drives as a plurality of disk objects and be able to perform a plurality of operations on said disk objects, since the objective is to model the computer system along with its data storage sub-systems using an object oriented paradigm.**) The Examiner has determined that the Applicant's arguments are not persuasive and upholds that the combination of the *Brumley* reference and the *Morris* reference was provided with a motivation to combine.

Regarding applicants response to Examiner's 35 U.S.C. 103 rejection of Claims 16-21 under Brumley or Brumley and Morris; The Applicant states that there is no motivation to combine the *Morris* reference and the *Brumley* reference because they are from disparate fields. The Examiner asserts that Applicant's objection is mere attorney argument.

MPEP section 2145;

"2145 Consideration of Applicant's Rebuttal Arguments  
I. ARGUMENT DOES NOT REPLACE EVIDENCE WHERE EVIDENCE IS NECESSARY

Attorney argument is not evidence unless it is an admission, in which case, an examiner may use the admission in making a rejection. See MPEP § 2129 and § 2144.03 for a discussion of admissions as prior art. The arguments of counsel cannot take the place of evidence in the record. *In re Schulze*, 346 F.2d

Art Unit: 2123

600, 602, 145 USPQ 716, 718 (CCPA 1965); *In re Geisler*, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997) ("An assertion of what seems to follow from common experience is just attorney argument and not the kind of factual evidence that is required to rebut a *prima facie* case of obviousness."). See MPEP § 716.01(c) for examples of attorney statements which are not evidence and which must be supported by an appropriate affidavit or declaration."

The Examiner asserts that both the *Morris* reference and the *Brumley* reference are both using Object Oriented technologies to accomplish a type of software development and therefore are from similar fields and can be combined. The Examiner has determined that the Applicant's arguments are not persuasive and upholds that the *Brumley* reference and the *Morris* reference are from similar enough fields of computer software to allow combination.

Regarding applicants response to Examiner's 35 U.S.C. 103 rejection of Claims 16-21 under Brumley or Brumley and Morris; The Applicant states that the *Morris* reference doesn't teach or suggest *software which models the plurality of disks as a plurality of objects* nor *provides a plurality of tools for performing a plurality of operations on a plurality of disk objects* nor *invokes a response by the plurality of disks to the plurality of operations performed on the plurality of disk objects* nor, *does the Brumley reference as stated in the Office Action*. The Examiner asserts that the *Morris* reference does teach a plurality of disks represented as a plurality of objects, **Figure 2 and Col. 5 Lines 54-57** "These constituent parts are, in turn, members of a "class" of objects having similar features. For example, the 300 MB SCSI Hard Disk part 58 is a member of the class "300 MD SCSI Hard Disk" (*Here is a plurality of disks being represented as a plurality of objects*) 66. Class 66 is, in turn, a subclass of class "Generic Hard Disk" 72, as are subclasses 64, 68 and 70."

The Examiner respectfully asserts that the *Brumley* reference teaches a plurality of tools for performing a plurality of operations on a plurality of objects and invokes a response by the plurality of objects to the plurality of operations performed on the plurality of objects, and that the Examiner's purpose for bringing in the *Morris et al.* reference was to provide the missing element in the *Brumley* reference namely that the manipulation of objects disclosed in the *Brumley* reference can be done on the **SCSI hard disk objects** disclosed in the *Morris et al.* teaching, which in this case is a **SCSI hard disk object**. The Examiner asserts that performing operations on objects is an inherent trait of Object technology and therefore it is implicit that the disk objects in *Morris et al.* reference could be manipulated as is disclosed in the *Brumley* reference and further that one of ordinary skill in the art, at the time of the invention would be motivated to represent a SCSI array controller and its attached SCSI hard disk drives by being exposed to the teachings in the *Morris et al.* reference and the *Brumley* reference. The Examiner has determined that the Applicant's arguments are not persuasive and upholds that the *Brumley* reference and the *Morris* reference stand as teaching the elements in **Claims 16-21**.

Regarding applicants response to the Examiners Objection to the Drawings: The Examiner accepts the Applicants drawing corrections and amendments and withdraws his objections to the drawings.

Regarding applicants response to rejection of Claims 1-17 and 19-21 under 35 U.S.C. 112 as lacking enablement: Applicants have argued that the examiner's rejection of Claims 1-17 and 19-21 under 35 U.S.C. 112 (1) wherein the "*Office Action asserts that this alleged lack of*

*enablement relates to a lack of substantive detail pertaining to the claimed features.* " Applicant asserts that, "*this is not the test for enablement under 35 U.S.C. 112*" and the Applicant further asserts that "*an applicant need only provide a written description that permits one of ordinary skill in the art to make and or use the invention without undue experimentation*". Applicant asserts that, "*the Office Action does not provide any factors, reasons, or evidence that the specification fails to comply with §112. Instead, the Office Action merely cites portions of the specification and conclusorily states that the specification does not support in sufficient and clear detail...and is therefore not enabled*".

Examiner asserts that Applicants specification fails to properly enable such that one of ordinary skill in the art could make and or use the invention without undue experimentation, as **stated in the rejection.** Examiner further asserts that for one of ordinary skill in the art to enable Applicant's invention, the one of ordinary skill in the art would require a "wrapper", which is well known in the art, to provide a level of abstraction to facilitate porting existing code between different operating systems without the requirement of coding a specific implementation for different computer operating systems. The Examiner further asserts that Applicant's specification does not contain the interface to the objects that are modeling or abstracting the hardware. The Examiner further asserts, that nowhere in applicant's specification, is there a mention of the relationship between the different objects, i.e. does the controller object inherit the bus object, does the array object encapsulate the volume object, which of the Applicant's objects are base classes? The Examiner further asserts that the Applicant's specification does not provide a Unified Modeling Language, (UML) diagram to represent the manner in which the Applicants objects interact and relate to each other. The Examiner further asserts that there are

no source code examples or function prototypes, data structures or other implementation examples that would support that the invention has been reduced to practice. The Examiner asserts that by "Applicants own admission" see page 4, lines 16-17 of applicants specification, the Applicant states, "The hardware device 16 may itself include software, such as a software interface (not shown)", this type of software interface needs to be shown to support enablement of the specification, the Examiner asserts that it would require to much experimentation on the part of one of ordinary skill in the art to have to guess how the software interface that is not shown functions.

The Examiner notes that the Applicant cites the case *In re Wands*, 8 USPQ2d 1400 (Fed Cir. 1988). However, this is mere attorney argument Applicant's have provided no affidavit as indicated in MPEP section 2106.02 or explanation as to how this case relates to Examiners 35 U.S.C. 112(1) rejection, *please refer to (37 CFR 1.132)*. The following is a quote from the MPEP Section 2106.02;

"Arguments of counsel may be effective in establishing that an examiner has not properly met his or her burden or has otherwise erred in his or her position. In these situations, an examiner may have failed to set forth any basis for questioning the adequacy of the disclosure or may not have considered the whole specification, including the drawings and the written description. However, it must be emphasized that arguments of counsel alone cannot take the place of evidence in the record once an examiner has advanced a reasonable basis for questioning the disclosure. See *In re Budnick*, 537 F.2d at 538, 190 USPQ at 424; *In re Schulze*, 346 F.2d 600, 145 USPQ 716 (CCPA 1965); *In re Cole*, 326 F.2d 769, 140 USPQ 230 (CCPA 1964). For example, in a case where the record consisted substantially of arguments and opinions of applicant's attorney, the court indicated that factual affidavits could have provided important evidence on the issue of enablement. See *In re Knowlton*, 500 F.2d at 572, 183 USPQ at 37; *In re Wiseman*, 596 F.2d 1019, 201 USPQ 658 (CCPA 1979)."

It is noted that the Applicant's response is mere attorney argument, in the absence of a affidavit, see MPEP citation above. The Examiner asserts that the Applicants specification is not enabled because it would require undue experimentation, on the part of one of ordinary skill in the art, to make and or use Applicant's invention and therefore the Examiner upholds the 35 U.S.C. 112 (1) rejection of **Claims 1-17 and 19-21**.

Regarding applicants response to rejection of Claim 4. The Examiner asserts that Applicant has properly amended Claim 4 as per indicated in Examiner's Office Action and Examiner removes the rejection of Claim 4 under 35 U.S.C. 112(2) second paragraph. The Examiner asserts that Claim 4 is still rejected under 35 U.S.C. 112(1) and 35 U.S.C. 103(a) (*see paragraph 32*).

The Examiner reasserts the earlier 35 U.S.C. 112(1) rejections.

#### **Claim Rejections - 35 USC § 112**

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

**Claim(s) 1-17 and 19-27 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention without undue experimentation.**

This relates to a lack of substantive detail pertaining to the claimed features.

4. Claim 1, for example, recites "*A method, comprising: defining a plurality of hardware devices as a plurality of objects;* ". The specification does not support with enough detail the method used to define a hardware device as an object and therefore the method is not enabled. Specifically, the example on page 6, where the applicant discloses, "For example, suppose the hardware device modeled is a staple gun. A staple gun may push staples into a piece of paper. Accordingly, an object modeling the staple gun may appropriately include a method, PushStaples" along with Figure(s) 1,5 and 6 and the disclosed descriptions on page(s) 3,4,5,6 and 7 do not provide enough detail such that one of ordinary skill in the art could make and/or use the invention, without undue experimentation.

Claim 1, as another example recites, "*providing a plurality of tools to perform a plurality of operations on the plurality of objects;* ". The specification does not support with enough detail the method used to develop tools to perform operations on objects and is therefore not enabled. Specifically the example on page 7, "In Figure3, the tools of the configuration library 20 may include several functions. The functions may be used by the software program 12 to communicate with the objects 30." Along with further disclosures on page(s) 8 and 9 do not provide enough detail such that one of ordinary skill in the art could make and/or use the invention, without undue experimentation.

Claim 1, as another example recites, "*executing a software program to use the plurality of tools: and responding to the plurality of operations by the plurality of hardware devices.* ". The specification does not support with enough detail the method used to create the software tools and the software program needed to respond to the hardware devices and is therefore not enabled. Specifically, the example on page 14 recites, " the RAID software 12a may perform an

operation to determine the devices which are located on a bus. Looking back to Figure 5, suppose the RAID software 12a wants to determine which devices are connected to the SCSI bus 110A of the system 14. An operation to scan the SCSI bus 110A ... includes invoking the method invocation function 62 of the configuration library 20 (see Figure 3). In Figure 12, the method invocation function 62 is passed two parameters (block 202). The object 30 for which a method 32 is invoked is provided as a parameter. ... The method 32 to invoke from the passed object is also provided as a parameter." ... from page 15 Accordingly, an integer value is stored in the bus device count memory location once the property is retrieved by the get property function 64. The scanning operation is thus complete (block 210)." Along with disclosures in the figure(s) 5 and 12 are inexact and do not provide sufficient detail such that a one of ordinary skill in the art could make and/or use the invention, without undue experimentation.

5. Claim 2 recites, "*assigning a plurality of properties to the plurality of hardware devices; and assigning a plurality of methods to the plurality of hardware devices.*" The specification does not support, with sufficient detail, a clear description of how the plurality of properties and plurality of methods are assigned to the plurality of hardware devices and therefore the claim is not enabled. Specifically, the example on Figure 8 along with the description on page's 12 and 13 disclose, "the bus object includes a scan bus method 111 and several properties 34, including a bus index property 112, a bus identification property 113, a bus protocol,..." which does not provide enough detailed disclosure of the specific hardware and how that hardware is modeled in software, such that one of ordinary skill in the art could make and/or use the invention, without undue experimentation.

Art Unit: 2123

6. Claim 3 recites, "*assigning a plurality of events to the plurality of hardware devices.*" The specification does not support with a sufficient level of detail a clear description of how the events are implemented and is therefore not enabled. Specifically, the description on page(s) 6-7 " ...the staple gun may run out of staples. Accordingly, an object modeling the staple gun may appropriately include an event, OutOfStaples." do not clearly define what the event is such that one of ordinary skill in the art could make and/or use the invention, without undue experimentation.

7. Claim 4 recites, "**providing a function for invoking a method of an object; providing a function for setting a property of an object; and providing a function for retrieving a property of an object.**" The specification does not support with a sufficient level of detail the clear definition of these function(s) and is therefore not enabled. For example, the disclosure on page 8 recites, "the configuration library 20 also provides for manipulating the properties 34 of the object 30. A get property function 64 enables the software program 12 to retrieve the property 34 of the object 30." As an example, this part of the specification does not clearly and exactly disclose the method used to implement the get property function such that one of ordinary skill in the art could make and/or use the invention, without undue experimentation.

8. Claim 5 recites, "*providing a function for monitoring an event of an object; and providing a function for ending monitoring an event of an object.*" The specification does not support with a sufficient level of detail the clear and exact definition of these function(s) and is therefore not enabled. For example, the specification on page 8 recites, "The configuration library 20 also provides functions which enable the software program 12 to be notified when an event to one of the hardware devices 16-18 occurs. A monitor event function 68, when enabled,

allows the software program 12 to be notified upon the occurrence of the particular event 36 of object 30. Likewise, a monitor event off function 70 allows the software program 12 to turn off monitoring of the particular event 36 of the object 30.” The preceding example shows how the specification does not clearly and exactly disclose the method for creating these functions such that one of ordinary skill in the art could make and/or use the invention, without undue experimentation.

9. Claim 6 recites, “*An article comprising a medium storing instructions that cause a processor-based system to: receive a request from a software program,*” The specification does not support with a sufficient level of detail the clear and exact definition of how the processor based system receives a request from the software program and therefore is not enabled. For example on page 3 of the specification, “the software program may include a graphical user interface which permits a user of the software program to control and monitor hardware devices.” This recitation does not disclose the exact manner that is employed to create the software program such that one of ordinary skill in the art could make and/or use the invention, without undue experimentation.

10. Claim 7 recites, “*processor-based system to use a plurality of configuration library tools to act upon a plurality of objects*” This specification does not disclose at the level of detail and clarity required such that the claim is enabled. Specifically, the specification recites, “The Configuration library 20 further includes a set of functions for object creation and object discovery.” This recitation does not clearly and exactly disclose the manner in which the configuration library could be made and/or used by one of ordinary skill in the art, without undue experimentation, and is therefore not enabled.

11. Claim 8 recites, “*storing instructions that cause a processor based system to invoke a plurality of methods of the plurality of objects.*” The specification does not support with a sufficient level of detail and in a clear and exact manner how the processor-based system invokes the methods and the objects disclosed in Claim 8 and is therefore not enabled. As an example from page 14 line 13, “*the RAID software 12a may perform an operation to determine the devices which are located on a bus*” is not clear and detailed enough that one of ordinary skill in the art could make and/or use the invention, without undue experimentation.

12. Claim 9 recites, “*... a processor-based system to retrieve a plurality of properties of the plurality of objects*”. The specification does not provide sufficient detail in a clear and exact manner and is therefore not enabled. As an example, the specification discloses on page 13, “*the RAID software 12a may set or retrieve any of the properties or may invoke the scan bus method 111, as desired.*” The specification doesn’t disclose in sufficient exact detail how the objects properties are retrieved such that one of ordinary skill in the art could make and/or use the invention, without undue experimentation.

13. Claim 10 recites, “*... cause a processor-based system to monitor a plurality of events for the plurality of objects*” The specification does not support in sufficient detail the manner in which the system monitors the events and is therefore not enabled. For example on page 13, “*... a disk is normal event 161 may permit the RAID software 12a to be notified when the disk has been marked normal*” This example, along with the rest of the specification, does not disclose, with enough detail, how the monitoring of events is accomplished such that one of ordinary skill in the art could make and/or use the invention, without undue experimentation.

14. Claim 11 recites, “*A system, comprising: a processor; a plurality of hardware devices; and a medium including a software program which: models a plurality of hardware devices as a plurality of objects, wherein the plurality of objects comprise a plurality of methods and a plurality of properties; provides a plurality of tools for performing a plurality of operations on the plurality of objects; and invokes the plurality of hardware devices to respond to the plurality of operations performed on the plurality of objects.*” The specification does not support in sufficient and clear detail the system as disclosed above and is therefore not enabled. As an example, the section of the specification on page 11 “In Figure 5, a system 14 ... may include a processor 90 and a memory 92 are coupled to a processor bus 94.” Along with from page 12 “From the physical RAID hardware devices 17a of Figure 5, a plurality of RAID objects 30a may be derived.” As well as page 12 the specification recites, “...the bus object 110 includes a scan bus method 111 and several properties 34, including a bus indexing property 112, a bus identification property 113, a bus protocol property 114 ...”. Which does not disclose in a clear and detailed manner such that one of ordinary skill in the art could make and/or use the invention, without undue experimentation.

15. Claim 12 recites “*wherein the software program further models the plurality of hardware devices as a plurality of events.*” The specification does not support in sufficient and clear detail the software program as disclosed above and is therefore not enabled. As an example, from page 13 of the specification, “...a disk is normal event 161 may permit the RAID software 12a to be notified when the disk has been marked normal” The monitoring of events by the software needs to be disclosed in the specification such that one of ordinary skill in the art could make and/or use the invention, without undue experimentation.

16. Claim 13 recites “*...the software program further performs operations on the plurality of objects by invoking one of the plurality of methods of one of the objects.*” The specification does not support in sufficient and clear detail the operations on the plurality of objects as disclosed above and is therefore not enabled. As an example from page 14, “An operation to scan the SCSI bus **110A** according to one embodiment of the invention includes invoking the method invocation function **62** of the configuration library **20** (see Figure 3)” The details of how the software program performs operations on the plurality of methods of one of the objects is not clear and detailed enough such that one of ordinary skill in the art could make and/or use the invention, without undue experimentation.

17. Claim 14 recites, ”*...the software program further performs operations on the plurality of objects by setting one of the plurality of properties of one of the plurality of objects.*” The specification does not support in sufficient and clear detail the operations on the plurality of objects as disclosed above and is therefore not enabled. As an example, on page 13 ““the RAID software **12a** may set or retrieve any of the properties or may invoke the scan bus method **111**, as desired.” The details of how the software program sets the properties of one of the objects is not disclosed such that one of ordinary skill in the art could make and/or use the invention, without undue experimentation.

18. Claim 15 recites, “*the software program further performs operations on the plurality of objects by monitoring one of the plurality of events of one of the plurality of objects.*” The specification does not support in sufficient and clear detail the method used to monitor the events of one of the objects and is therefore not enabled. As an example, on page 8 “The configuration

library 20 also provides functions which enable the software program 12 to be notified when an event to one of the hardware devices 16-18 occurs. A monitor event function 68, when enabled, allows the software program 12 to be notified upon the occurrence of the particular event 36 of object 30. Likewise, a monitor event off function 70 allows the software program 12 to turn off monitoring of the particular event 36 of the object 30." Which does not show the method for monitoring the events of the object such that one of ordinary skill in the art would be able to make and/or use the invention, without undue experimentation.

19. Claim 16 recites, "*A system comprising: a processor; a plurality of disks; and a memory storing software which: models the plurality of disks as a plurality of disk objects; provides a plurality of tools for performing a plurality of operations on the plurality of disk objects; and invokes a response by the plurality of disks to the plurality of operations performed on the plurality of disk objects.*" The specification does not support in clear detail the method for the plurality of tools to perform a plurality of operations on a plurality of disk objects and is therefore not enabled. As an example, on page 11 of the disclosure, "In Figure 5, a system 14 ... may include a processor 90 and a memory 92 are coupled to a processor bus 94." Along with from page 12 " From the physical RAID hardware devices 17a of Figure 5, a plurality of RAID objects 30a may be derived" further on page 12, " Likewise, the controller object 100 includes properties 34, such as a bus counting method 103, used to report the number of buses on the controller, and a disk counting method 104, for reporting the number of disks on the controller." This example, along with the rest of the specification, do not show enough detail such that a person of ordinary skill in the art could make and/or use the invention, without undue experimentation.

Art Unit: 2123

20. Claim 17 recites, "*The system of claim 16, wherein the software program is stored in memory.*" Which does not support in clear detail how the software program is stored in memory and is therefore not enabled. The examiner found no description in the specification whereby the software program is stored in memory. Therefore one of ordinary skill in the art could not make and/or use the invention without undue experimentation.

21. Claim 19 recites, "*The system of claim 18, further comprising a memory storing software which...*" which does not support in clear detail how the software program is stored in memory and is therefore not enabled. The examiner found no description in the specification whereby the software program is stored in memory. Therefore one of ordinary skill in the art could not make and/or use the invention, without undue experimentation.

22. Claim 20 recites, "*The system of claim 19, further comprising a memory storing software which...*" which does not support in clear detail how the software program is stored in memory and is therefore not enabled. The examiner found no description in the specification whereby the software program is stored in memory. Therefore one of ordinary skill in the art could not make and/or use the invention, without undue experimentation.

23. Claim 21 recites, "*The system of claim 20, further comprising a memory storing software which invokes a response to the plurality of operations by: the plurality of buses for operations performed on the plurality of bus objects; and the plurality of controllers for operations performed on the plurality of controller objects*" The specification does not support in clear detail how the software program is stored in memory and the specification does not disclose in a clear and detailed manner how the software invokes a response to a plurality of

operations on the bus objects or the controller objects and is therefore not enabled. As an example on page 12 of the specification, “...the controller object **100** includes properties **34**, such as a bus counting method **103**, used to report the number of buses on the controller, and a disk counting method **104**, for reporting the number of disks on the controller.” Which does not disclose in a clear and detailed manner how the software invokes a response to operations on the controller and bus objects such that one of ordinary skill in the art could make and/or use the invention, without undue experimentation.

24. Claim 22 recites, *“An object comprising: a plurality of methods to model operations performed upon a device; a plurality of properties to model attributes of the device; and a plurality of events to model actions of the device.”* The specification does not disclose in a clear and detailed manner how the plurality of methods models operations, how the plurality of properties model the attribute of the device and how the plurality of events models the actions of the device and therefore is not enabled. As an example on page 5 of the specification, “The objects **30**, in essence, define the hardware devices **16-18** by modeling the operations (or methods), the attributes (or properties), and the actions (or events) of each hardware device **16-18**. An operation, known as a method, may be invoked upon an object.” Which does not disclose in a clear and detailed manner the methods, properties, and events of the device objects such that one of ordinary skill in the art could make and/or use the invention, without undue experimentation.

25. Claim 23 recites, *“...wherein the methods comprise parameters of the object.”* The specification does not disclose with clear detail how the methods comprise the parameters of the

object and therefore is not enabled. As an example, on page 8 of the specification discloses, “The method 32 may include parameters which may be set prior to invoking the method 32 or may be returned upon executing the method 32.” The specification does not disclose in a clear and detailed manner what the parameters are such that one of ordinary skill in the art could make and/or use the invention, without undue experimentation.

26. Claim 24 recites, “*The object of claim 23, wherein the parameters comprise properties of the object.*” The specification does not show in a clear and detailed manner how the parameters comprise the properties of the object and therefore is not enabled. As an example, on page 8 of the specification, “In one embodiment of the invention, the parameters may include properties 34 of the object 30 for which the method 32 is invoked.” which does not show in a clear and detailed manner how the parameters may include the properties of the object such that one of ordinary skill in the art could make and/or use the invention, without undue experimentation.

27. Claim 25 recites, “*A system, comprising: an interface, comprising: a plurality of functions; and a plurality of objects coupled to the plurality of functions and a plurality of devices coupled to the interface, wherein a software program may control the plurality of devices by communicating with the interface.*” The specification does not disclose in a clear and detailed manner how the software program may control the system, functions and objects coupled to functions, and devices coupled to an interface such that the software program may control the devices via the interface and is therefore not enabled. As an example of page 11 of the specification, “In Figure 5, a system 14 . . . may include a processor 90 and a memory 92 are

Art Unit: 2123

coupled to a processor bus 94.” Along with from page 12 “From the physical RAID hardware devices 17a of Figure 5, a plurality of RAID objects 30a may be derived” further on page 12, “Likewise, the controller object 100 includes properties 34, such as a bus counting method 103, used to report the number of buses on the controller, and a disk counting method 104, for reporting the number of disks on the controller.” And including from page 14 “...the RAID software 12a may perform a number of operations on the RAID hardware devices 17a. Simply by controlling the properties 34 and methods 32 of the RAID objects 30a, the RAID software 12a can configure the RAID hardware devices 17a.” which does not disclose the detail required for one of ordinary skill in the art to make and/or use the invention, without undue experimentation.

28. Claim 26 recites, “...*the plurality of functions further comprises a function for retrieving a property of one of the plurality of objects.*” The specification does not disclose in a clear and detailed manner how the function can retrieve the property from the object and is therefore not enabled. An example from page 12, “Each of the properties 34 is accessible to the RAID software 12a for communicating with the controller of the RAID hardware devices 17a.” which does not disclose in a clear and detailed manner how the software retrieves properties from the one of the plurality of objects such that one of ordinary skill in the art could make and/or use the invention, without undue experimentation.

29. Claim 27 recites, “...*the function for retrieving a property of one of the plurality of functions further comprises: a parameter to identify the object for which the property is retrieved; a parameter to identify the property to be retrieved; and a parameter for storing a*

**result.”** The specification does not disclose in a clear and detailed manner a parameter to identify the object, a parameter to identify the property, a parameter for storing a result and is therefore not enabled. As an example page 8 of the specification recites, “The method 32 may include parameters which may be set prior to invoking the method 32 or may be returned upon executing the method 32.” And on page 9 “API 10 provides the capability to invoke the methods 32, set and retrieve the properties, 34, and monitor the events 36 for a given object 30.” which does not disclose in a clear and detailed manner how a function for retrieving a property of one of the plurality of functions comprises: a parameter to identify the object for storing a result such that one of ordinary skill in the art could make and/or use the invention, without undue experimentation.

**Claim Rejections - 35 USC § 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

30. The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C.

122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

31. **Claim(s) 1,2 are being rejected under 35 U.S.C. 102(e) as being clearly anticipated by Savitzky et al. "METHOD OF USING OBJECT-ORIENTED COMMUNICATION SYSTEM WITH SUPPORT FOR MULTIPLE REMOTE MACHINE TYPES" U.S. Patent 5,732,261.** *Savitzky et al.* Discloses, Taking claim 1, for example: A method, comprising: defining a plurality of hardware devices as a plurality of objects, From **Col. 2 Lines 66 & 67**, "the first plurality of software objects describing services for one of the plurality of remote machines" *Savitzky et al* discloses, providing a plurality of tools to perform a plurality of operations on the plurality of objects, From *Savitzky et al* **Col 2 Lines 55 & 56**, The preset invention relates generally to the area of service tools for remote machines. *Savitzky et al* discloses, executing a software program to use the plurality of tools; and responding to the plurality of operations by the plurality of hardware devices. From *Savitzky et al* **Col. 2 Lines 18 to 23**, To access a remote machine, the remote service application uses a "device driver" associated with some interface device such as a modem, and a "protocol driver" that formats the data sent to and received from the remote machine. These drivers may be part of the operating system or may be modules within the application program.

With respect to Claim 2 the *Savitzky et al* reference discloses defining the plurality of hardware devices as a plurality of objects further comprises: assigning a plurality of properties to the plurality of hardware devices; and assigning a plurality of methods to the plurality of hardware devices. From *Savitzky et al* **Col. 1, Lines 26 to 35**. As is understood to one skilled in the art, an "object" is an abstraction of a real world entity and is implemented as a combination

of a data structure (whose fields are called "attributes" or "data members") and a set of operations ("methods" or "member functions") that can be performed on it. A class" is a data type for a set of objects that each have the same data structure and the same operations. An "instance" of a class is an object, the data type of which is the class as actually embodied in the memory of a running application program. As recited for claims 25-27; *Savitzky et al.* discloses: A system, comprising: an interface, comprising: a plurality of functions; and a plurality of objects coupled to the plurality of functions; and a plurality of devices coupled to the interface, wherein a software program may control the plurality of devices by communicating with the interface and wherein the plurality of functions further comprises a function for retrieving a property of one of the plurality of objects, and wherein the function for retrieving a property of one of the plurality of functions further comprises: a parameter to identify the object for which the property is retrieved; a parameter to identify the property to be retrieved; and a parameter for storing a result. As an example *Savitzky et al.* Discloses, **Col. 1 Lines 17-22** "The present invention relates generally to the area of service tools for remote machines. More specifically, the present invention relates to communication between service application programs in computer systems, and remote devices such as remote machines and external data in files, databases, and programs. " As another example *Savitzky et al.* Discloses, **Col. 1 Lines 24-35** "An understanding of object oriented programming and object-oriented application frameworks will assist in full understanding of the present invention. As is understood to one skilled in the art, an "object" is an abstraction of a real world entity and is implemented as a combination of a data structure (whose fields are called "attributes" or "data members") and a set of operations ("methods" or "member functions") that can be performed on it. A "class" is a data type for a set

of objects that each have the same data structure and the same operations. An "instance" of a class is an object, the data type of which is the class, as actually embodied in the memory of a running application program."

**Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

32. **Claim(s) 3, 4 and 5** are being rejected under 35 U.S.C. 103(a) as being unpatentable over **Savitzky et al.** in view of **Brumley et al.** U.S. Patent 5,926,775 As noted above *Savitzky et al.* discloses A method, comprising: defining a plurality of hardware devices as a plurality of objects; Providing a plurality of tools to perform a plurality of operations on the plurality of objects; Executing a software program to use the plurality of tools and responding to the plurality of operations by the plurality of hardware devices; assigning a plurality of properties to the plurality of hardware devices; and assigning a plurality of methods to the plurality of hardware devices. However the *Savitzky et al.* does not expressly disclose assigning a plurality of events to the plurality of hardware devices. The *Brumley et al.* reference discloses in **Col. 12 Lines 46-49.** "The Message Manager handles messaging to the user application in response to events or interrupts." It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify *Savitzky et al.* with *Brumley et al.* and assign a plurality of

Art Unit: 2123

events to the plurality of hardware devices because the mechanism of reporting driver status via event handling is very efficient as opposed to other methods of obtaining current status.

With respect to Claim 4 *Brumley et al.* doesn't expressly disclose a function for invoking a method of an object. However, *Savitzky et al.* recites, **Col. 16, Lines 28-31**, "if the SI.sub.--AppItem is marked "busy" a callback method is invoked when the work is actually done." It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify *Savitzky et al.* with *Brumley et al.* to provide a function for invoking a method of an object because otherwise the object could not be used.

With respect to Claim 4 both *Brumley et al.* and *Savitzky et al* teach a function for setting a property of an object and a function for retrieving a property of an object. For example *Savitzky et al.* recites, **Col. 4 Lines 60-63**. "If there is a member function that updates a value, its name ends in "Set"; the update function is declared by the same macro that declares the attribute." Also *Brumley et al.* recites **Col. 23 Lines 61-64**. Once reserved, Get(attrID, attrVal) and Set(attrID, attrVal) attribute calls provide the interface for setting up and querying current programmable attributes. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify *Savitzky et al* with *Brumley et al.* to provide function(s) for setting and retrieving a property of an object because that is the manner in which attributes are accessed and modified in object oriented programming.

33. **Claim(s) 6 - 15 are being rejected under 35 U.S.C. 103(a) as being unpatentable over Brumlet et al. U.S. Patent 5,926,775 in view of Muller et al. U.S. Patent 6,247,077.**

The *Brumlet et al.* discloses, as recited from claims 6-10; “An article comprising a medium storing instructions that cause a processor-based system to: receive a request from a software program; act upon a plurality of objects based upon the request received; and manipulate a plurality of hardware devices modeled by the plurality of objects.” **Figure(s) 2 thru 17 and Col. 27 Lines 6 thru 33.**

As regards Applicants amended **Claim 6**, the *Brumlet et al.* reference does not expressly disclose a, “redundant array of independent disks modeled by the plurality of objects”.

The *Muller et al.* reference discloses a redundant array of independent disks modeled by the plurality of objects, **Figure 1 element 104, Figure 2 element 218 and 222, Figure 3 elements 222 and 218, Figure 4 elements 402 thru 416, Figure 5 elements 502, 504, 516, 500, 216, 224 and 222 and Col. 5 Lines 18-67 and Col.6 Lines 1-67 and Col. 7 Lines 1-35 and Col. 8 lines 1-38 as well as the Abstract, Background of the Invention and Detailed Description of the Preferred Embodiment.**

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to have modified the *Brumlet et al.* reference with the *Muller et al.* reference because, (*motivation to combine*) “the uneven technology growth...requires a fundamentally different storage connectivity model-one which allows workload scaling to match technology improvements, **Muller et al. Col. 3 Lines 22-26.**

As regards to **Claim 7 Col. 4 Lines 18-24.** *Brumlet et al.* Recites, “A driver family interpreter executes on top of the mini-driver primitives. The interpreter operates to configure device family independent or hardware independent features for each device. The interpreter

can also operate to convert from a legacy user interface to the low level programming interface provided by the respective mini-driver primitives.“ As recited from claims 11-15, *Brumlet et al.* discloses: A system comprising: a processor; **Col. 6 Lines 44 thru 49.** a plurality of hardware devices, **Col. 7 Lines 7 thru 13.** a medium including a software program which: models the plurality of hardware devices as a plurality of objects, wherein the plurality of objects comprise a plurality of methods and a plurality of properties; **Figure(s) 2,3,4,7,11,12,13** and **Col. 3 Lines 21-28** “The DAQ driver level software also includes a plurality of mini-driver primitives. Each of the mini-driver primitives performs a portion of controlling the DAQ device. In other words, the DAQ device includes a plurality of hardware resources for performing DAQ functions, and each of the plurality of mini-driver primitives controls one of the hardware resources.“ and *Brumlet et al.* Recites, **Col. 13 Lines 26-30** “Primitives have a set of attributes, which themselves have values. Primitives also support a set of control codes, which are used in conjunction with the Control method on a primitive.”

With respect to Claim 15. The *Brumley et al.* reference discloses in **Col. 12 Lines 46-49.** “The Message Manager handles messaging to the user application in response to events or interrupts.”

Furthermore, *Brumley et al.* discloses: An object comprising: a plurality of methods to model operations performed upon a device; a plurality of properties to model attributes of the device; and a plurality of events to model actions of the device, wherein the methods comprise parameters of the object and wherein the parameters comprise properties of the object. *Brumley et al.* Recites **Figure(s) 2 & 3** and **Col. 23 Lines 61-64** “Once reserved, Get(attrID, attrVal) and Set(attrID, attrVal) attribute calls provide the interface for setting up and querying current programmable attributes” As regards to “*Events*” **Col. 12 Lines 46-49**. “The Message Manager handles messaging to the user application in response to events or interrupts.”

34. **Claim(s) 16 - 21** are being rejected under 35 U.S.C. 103(a) as being unpatentable over **Brumley et al. U.S. Patent 5,926,775** in view of **Morris et al. U.S. Patent 5,877,966** *Brumley et al.* discloses A system, comprising: a processor; a plurality of disks; and memory storing software. Also *Brumley et al.* recites **Col. 23 Lines 61-64**. Once reserved, Get(attrID, attrVal) and Set(attrID, attrVal) attribute calls provide the interface for setting up and querying current programmable attributes. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide function(s) for setting and retrieving a property of an object. Which can be restated to being, “plurality of tools for performing a plurality of operations on “some type” of object(s)”. *Brumley et al.* teaches multiple buses and multiple controllers. **Figure 1, Figure 1A.** and further teaches multiple bus objects and multiple controller objects. **Figure(s) 11,12 and 13.**

However, *Brumley et al.* does not expressly disclose is: models the plurality of disks as a plurality of disk objects. *Morris et al.* teaches, **Figure 2 and Col. 5 Lines 54 – 57**. “These

constituent parts are, in turn, members of a "class" of objects having similar features. For example, the 300 MB SCSI Hard Disk part 58 is a member of the class "300 MD SCSI Hard Disk" 66. Class 66 is, in turn, a subclass of class "Generic Hard Disk" 72, as are subclasses 64, 68 and 70." *Morris et al.* also teaches a plurality of volumes and a plurality of arrays. **Col. 5 Lines 29-39.** At the time of the invention it would have been obvious to one of ordinary skill in the art to modify *Brumley* with *Morris* in order to represent disk drives as a plurality of disk objects and be able to perform a plurality of operations on said disk objects, since the objective is to model the computer system along with its data storage sub-systems using an object oriented paradigm.

35. **Claim(s) 28-32 are being rejected under 35 U.S.C. 103(a)** as being unpatentable over **Savitzky et al. U.S. Patent 5,732,261** in view of **Muller et al. U.S. Patent 6,247,077** and in further view of **Christiansen U.S. Patent 5,915,253**.

As regards to Applicants new **Claims 28-32**, the limitations of **Claim 1** have been rejected as being anticipated by the *Savitzky et al.* reference, see Examiners rejection paragraph 31 above.

As regards **Claims 28 and 29** the *Savitzky et al.* reference does not expressly teach does not expressly disclose a, "redundant array of independent disks modeled by the plurality of objects".

The *Muller et al.* reference discloses a redundant array of independent disks modeled by the plurality of objects, **Figure 1 element 104, Figure 2 element 218 and 222, Figure 3 elements 222 and 218, Figure 4 elements 402 thru 416, Figure 5 elements 502, 504, 516,**

**500, 216, 224 and 222 and Col. 5 Lines 18-67 and Col.6 Lines 1-67 and Col. 7 Lines 1-35 and Col. 8 lines 1-38 as well as the Abstract, Background of the Invention and Detailed Description of the Preferred Embodiment.**

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to have modified the *Savitzky et al.* reference with the *Muller et al.* reference because (*motivation to combine*), “the uneven technology growth...requires a fundamentally different storage connectivity model—one which allows workload scaling to match technology improvements, **Muller et al. Col. 3 Lines 22-26.**

As regards **Claims 30** the *Savitzky et al.* reference does not expressly disclose a Volume Object or Disk Objects.

The *Muller et al.* reference discloses a redundant array of independent disks modeled by the plurality of objects, *see 35 U.S.C. 103 rejection directly above in this paragraph.*

The *Christiansen* reference discloses a Volume Object **Figure 6 Item 180, and Figure 7 Item 180.**

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to have combined the *Savitzky et al.* reference with the *Christiansen* reference because (*Motivation to combine*) modularization and abstraction of the a computer systems file system allows for greater flexibility (*Christiansen Col. 1 Lines 1-67 and Col. 2 Lines 1-67 and Col. 3 Lines 1-31*).

As regards **Claims 31-32** the *Savitzky et al.* reference teaches at least one method and at least one property and at least one event as well as communicating using at least one property (*see Examiners rejection of Claim 1 Paragraph 31 above*).

Conclusion

The Examiner concludes that the Applicants arguments are unpersuasive and that the Examiners old and new rejections be upheld. Claim 28 is renumbered Claim 22, Claim 29 is renumbered Claim 23, Claim 30 is renumbered to Claim 24, Claim 31 is renumbered to Claim 25 and Claim 32 is renumbered to Claim 26.

36. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mr. Dwin M Craig whose telephone number is 703 305-7150.

The examiner can normally be reached on M-F between the hours of 9:00AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Teska can be reached on 703 305-9704. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-7239 for regular communications and (703) 746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305-3900.

DMC  
November 23, 2002

*Hugh Jones*  
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